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DEPARTMENT OF EMPLOYMENT AND PRODUCTIVITY

Joint Standing Committee of the Cotton and
Allied Fibres Spinning Industry

Recommendations for Securing Safety of Employed Persons

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Preamble

1 There has been a long history of joint consultation in the field of accident prevention in the Cotton Industry. Following the Report in 1911 of the Departmental Committee on Accidents in Places under the Factory and Workshop Act, conferences were held in Manchester in 1911 and 1912 with representatives of employers and operatives in the spinning branch of the trade and also of the Factory Department of the Home Office. The outcome was a report indicating that agreement had been reached on a large number of safety provisions and these were recommended to the trade.

2 By 1926 it was felt that these recommendations could be extended and strengthened, and a further series of conferences was held. These resulted in a wide measure of unanimity which was expressed in the Cotton Spinning Agreement dated 15th August 1928. Probably the most far reaching of the new recommendations was the institution of a Joint Standing Committee to consider from time to time whether amendments or additions to the Agreement were necessary. This Joint Standing Committee has continued to meet regularly up to the present time and has made a number of important amendments.

3 There is no doubt that these Agreements have been very effective in securing a higher and more uniform standard of safety in cotton textile factories. While any such Agreements or recommendations of a Committee cannot override or be a substitute for legal requirements, nevertheless, they can give to occupiers, machinery manufacturers and others in the trade practical help on methods of implementing the law. In particular, they afford guidance as to those parts of machinery where accidents are most liable to occur and the methods by which such accidents may be guarded against.

4 Since the 1928 Agreement, there has been much new legislation. The Factory and Workshop Act 1901 has been replaced first by the Factories Act 1937 and then by its successor, the Factories Act 1961. This includes new requirements as to the stopping of transmission machinery (Section 13(1)), transmission belts (Section 13(2)) and belt striking gear (Section 13(3)) and as to the use of automatic guards in situations where fixed guards cannot be used (Section 14(2)), also Section 15(1)(a) and Section 16, and the Regulations made thereunder, lay down the conditions under which examinations, lubrication and adjustments may be carried out on unguarded machinery when in motion. Section 17 imposes obligations on manufacturers of machinery and agents in the UK who import machinery. Section 20 deals with cleaning of machinery.

5 There have been developments in machines and manufacturing methods, and many changes in the personnel in the industry since the 1928 Agreement was concluded. The Joint Standing Committee therefore feels that the time has come to review the 1928 Agreement and to make a new set of recommendations to replace the Agreement. It considers that the Joint Standing Committee should continue to function with the same terms of reference as before and a recommendation to this effect is included.

6 One of the big changes in the Industry is the use of man-made fibres either alone or mixed with cotton. For purposes of accident statistics the definition of a cotton textile factory used by the Joint Standing Committee is "a factory engaged in the processing of any fibres on cotton or cotton waste preparation, spinning, weaving, winding or doubling machinery, in the areas defined in the Schedule to the Cotton Manufacturing Industry (Temporary Provisions) Act 1934". These areas include the whole of Lancashire, parts of Cheshire and Derbyshire and part of the West Riding of Yorkshire.

7 Experience in the working of the earlier Agreement has shown clearly that the proper use and maintenance of safety devices is quite as important as their initial provision and it is, therefore, essential to secure the co-operation and interest of the operatives. The Joint Standing Committee has taken note of the Agreement dated 23rd October 1967 between the British Spinners' and Doublers' Association and the National Association of Card, Blowing and Ring Room Operatives and the Amalgamated Association of Operative Cotton Spinners and Twiners for the establishment of Joint Safety Committees in spinning mills in which more than 150 people are employed and hopes that the Agreement will be fully implemented throughout the spinning and doubling sections of the industry.

8 The importance of training schemes is now recognised throughout industry and training in safety is a vital ingredient of any such scheme. A recommendation dealing with training is included.

9 The Joint Standing Committee now makes the following recommendations which it hopes will be printed.

Recommendations for Securing Safety in Spinning Mills

General

1 All guards shall be of rigid material, of substantial construction and be adequately secured and maintained.

2 All projecting set screws on revolving parts shall either be countersunk or efficiently guarded. Such set screws on machinery constructed before 1st January 1913 will be dealt with by Inspectors accordingly as the occurrence of accidents may indicate the necessity for countersinking or protection.

3 All spoked pulleys and driven handwheels unless safe by position or construction shall be plated or efficiently guarded.

4 Driving belts shall not be mounted or dismounted to or from a moving pulley on a lineshaft unless the belt is manipulated by means of a pole and either the lineshaft is sleeved or a belt perch provided.

5 Heavy overhead main driving belts or ropes shall be guarded underneath in all cases where there is liability of persons having to pass under them.
Note.—This does not refer to the rope race in the engine house.

6 All overlookers or other responsible persons should during the course of their ordinary duties pay special attention to the condition of all guards and safety appliances and operatives should report any defect in these guards or appliances at the earliest opportunity.

7 Locking motions and interlocking motions shall be examined and tested at least once in every period of three months by a responsible person and it is strongly recommended that a record of the results of this examination shall be kept.

8 Operatives are prohibited from putting any locking motion out of action while the machinery, which it is designed to protect, is in motion by mechanical power, nor shall any such machinery be run while the locking motion is out of action.

9 Ladders other than stepladders shall be fitted with hooks or other non-skid devices. All ladders and stepladders shall be periodically examined by a responsible person. Defects disclosed shall be immediately remedied or the ladders taken out of use.

10 All persons working about machinery should have their hair cut short, put up or otherwise confined in a net or cap and should wear close fitting apparel without loose ends.

11 A notice of safety instructions to persons employed, in a form agreed by the Joint Standing Committee outlining the duties of persons employed, shall be affixed in each mill.

12 Where hot water is provided for tea etc., proper arrangements shall be made and supervision exercised to prevent as far as possible the risk of scalding.

Cotton Chamber and Blowing Room Machinery

13 Beater and cylinder covers and the door immediately over the dirt grid shall be fitted with an automatic locking arrangement which renders it impossible to open the cover while the beater or cylinder is still running or to re-start the machinery until the doors have been closed. (To ensure compliance with the wording "impossible to open", it is suggested that screws securing the desk door arms be replaced by rivets in all cases and at other points where possible according to the design of the machine).

14 In dust trunks or other deliveries adjacent to porcupine cylinders, beaters and fan blades, access to the revolving parts through doors or inspection openings shall be prevented by placing them so that the revolving parts cannot be reached, or by other equally effective means.

15 All gearing shall be efficiently guarded unless it is in such a position as to be equally safe.

16 Side straps and pulleys of opening machines shall be efficiently guarded by fender or other effective guards.

17 Projecting ends of beater shafts shall be fitted with loose sleeves or be otherwise protected.

18 Spiked or fluted rollers on creepers or lattices on breakers and openers shall be so covered as to prevent access to the intake.

19 The lap rollers of all scutchers which are doffed manually shall be fitted with an interlocking lap guard.

Carding Engines

20 All gearing, including the gearing inside the coiler head, shall be efficiently guarded.

21 All cylinder doors on revolving flat cards shall be fitted with an automatic locking motion which will prevent the door from being opened until the cylinder has ceased to revolve and which shall render it impossible to re-start the machine until the door has again been closed except during stripping and grinding.

22 In view of the special features incorporated in the SACM (i.e. Societe Anonyme de Constructions Mecaniques, Mulhause, France) type of card, the cylinder cover need not be fitted with an automatic locking motion as required

for the doors of conventional cards provided that it is kept firmly screwed down during operation of the card and a warning notice in the following terms is kept affixed to the cover, i.e.

"CAUTION
COVER NOT TO BE REMOVED UNTIL YOU
KNOW THE CYLINDER HAS STOPPED"

23 Licker-in covers shall be screwed down so that they cannot readily be lifted while the machine is in motion.

24 On cards driven from overhead shafting the main driving belt and its intake with the cylinder pulley shall be fitted with a strap fork and nip guard interlocked with the motion required by paragraph 21 above. The strap fork and nip guard shall be of a form acceptable to the Joint Standing Committee and shall be maintained and properly secured and kept in position at all times when the driving belt is in motion. (See Appendix E).

25 On cards driven by individual electric motors the driving belts and pulleys shall:

(a) in the case of vee belts, or similar belts using grooved pulleys, be completely enclosed, and

(b) in the case of flat belts be, as far as it is practicable, completely encased, except in so far as the grooved stripping pulley on the outside of the main driving pulley may be external to the enclosing guard for the drive. Where cards are converted to individual drive the interlocking motion for the cylinder door shall be modified so as to secure compliance with paragraph 21 above.

26 It is recognised that the practicability of total enclosure of card drives may vary according to the circumstances in different factories and any practical difficulties may be referred for enquiry to the Joint Standing Committee.

27 On condenser cards of the roller and clearer type, in addition to the normal heavy wooden close fitting hinged cylinder cover, the taker-in should also be completely covered on top by a strong individual metal guard securely bolted to the machine frame at each end, and the guard should effectively enclose the periphery of the taker-in and curve upwards to a point as far as practicable behind and below the dirt roller so as to prevent access of the fingers. There shall be no objection to the retention of interlocking devices for cylinder covers where these are already fitted, provided that there is also an efficient guard for the taker-in.

Derby Doublers and Ribbon and Sliver Lap Machines

28 (a) Tooth gearing on all machines shall be efficiently guarded.

(b) On all machines the lap forming rollers shall be provided with a guard or cover which shall either:

(i) prevent access to the intake of the lap roller and fluted roller so long as the weighting rack is down, or

(ii) prevent access to the intake of the lap roller and fluted roller and be so locked that the guard or cover cannot be raised until the machine is stopped and the machine cannot be started until the guard or cover is closed.

Combers

29 (a) All gearing, including the gearing inside the coiler head, shall be efficiently guarded.

(b) The cylinder shall be provided with a guard which should prevent any access to it whilst in motion. The guard or guards shall be so locked that they cannot be raised until the machine is stopped and the machine cannot be started until all guards have been closed and locked. Alternatively, the guard or guards may be electrically interlocked with the drive to the cylinder so long as an effective braking system is fitted in conjunction with the interlock. If electrical interlocking is used the performance of the guard should be such as to make the machine as safe as it would be if a mechanically-interlocked guard as described earlier was provided.

Drawing Frames

30 (a) The roller gearing shall be effectively guarded. The guard shall be so locked that it cannot be raised until the machine is stopped and the machine cannot be started until the cover is closed.

(b) The pulley at the end of the frames shall be guarded.

(c) The undershaft shall be covered.

(d) All toothed gearing connected with the driving of the sliver cans shall be efficiently guarded.

(e) The calender roller gears shall be provided with a guard independent of the calender roller cover unless the cover effectively guards the gearing and is so interlocked that it cannot be opened while the machine is in motion.

Speed Frames

31 (a) The jack box gearing shall be efficiently guarded. The guard or guards shall be such that they cannot be opened while the machinery is in motion and the machinery cannot be started until the guards are closed.

(b) All other gear wheels shall be efficiently guarded. Provided that on machines constructed after 1929 and before the date of these recommendations, the bobbin skew gear wheels shall either:—

(i) be covered over the top and their total enclosure be completed by upright metal plates extending at the back from the roller beam to the floor; and at the front from the cover over the top of the wheels to the floor, and so arranged as to form a continuous screen at every position of the lifter rail; or

(ii) be covered over the top, and the covers be extended both in front and behind round the edge of the wheels to within not more than ¼ inch from the spindles.

The cleaning of spindles while in motion shall not take place on machines constructed before 1929 unless the bobbin skew gears are guarded to the above standard.

(c) The lifter rack and pinion shall be efficiently guarded and the guard shall be such that it will effectively protect the nip both as the rail rises and as it falls.

(d) All balance weights shall be cast with the eyelet forming part of the weights themselves.

Self-Acting Mules

32 The Committee recommends that the guards required by the Spinning by Self-Acting Mules Regulations 1905 be constructed in accordance with the specifications contained in Appendix A.

33 In mills built after 1st January 1913 the space behind the mules shall not be less than 3 feet between the rovings.

34 In order to prevent accidents to persons working underneath, the overhead driving strap should be provided with an efficient guard. Appendix B gives specifications for efficient guards.

35 All exposed and accessible headstock gearing, including the gearing mounted on the roller beam and the gearing driving the clearer rod, (sometimes known as the dirt, fluker or scavenger rod) should be efficiently guarded.

36 "Setting on" rods of mules, if tending to run to the "On" position on release, should be provided with a suitable type of lock which effectively prevents this from happening. The Joint Standing Committee considered the locks specified in Appendix C as suitable for this purpose.

37 Where persons have to be in the space between the fixed and traversing parts of a mule the system of stopping and starting the mule and signalling should be as specified in Appendix D.

38 A copy of this Appendix should be affixed in every mule room.

Ring and Throstle Frames

39 (a) All toothed gearing should be efficiently guarded. The guard covering the draft wheels should be so locked that the cover cannot be raised until the machine is stopped and the machine cannot be started until

the cover is closed. If an electrical interlock is used the performance of the guard should be such as to make the draft wheels as safe as they would be if a mechanical interlocked guard were provided.

(b) On machines with double tin rollers a guard should be fitted along the whole length of the nip between the rollers.

(c) No banding of spindles should be allowed while a frame is in motion where there is a double tin roller.

(d) The inner panels at the driving end of all ring frames should be extended to the floor.

Training

40 No person should work any machinery unless he has been fully instructed as to the dangers arising in connection with it and the precautions to be observed, and has received a sufficient training in work at the machine or is under adequate supervision by a person who has a thorough knowledge and experience of the machine.

Cleaning Machinery

41 No person shall be allowed to clean the following parts of machinery while they are in motion:

(a) *Blowing Room Machinery*

Any part, access to which requires the removal of guards.

(b) *Carding Engines*

Any part, except:

(i) side and backs (with a hand-brush only),

(ii) doffer covers, comb-box, top of comb and top of coilers (with soft waste or strips only).

(c) *Speed Frames*

(i) Any part that it has been agreed required guarding.

(ii) The spindles between the bobbin and spindle skew gears, unless the guard for the bobbin skew gears is extended, both in front and behind, round the edge of the wheels.

(d) *Self-Acting Mules*

(i) Backshaft scrolls, draw band and carrier pulleys.

(ii) Back carriage wheels and back of carriage.

(iii) Quadrant pinions.

(iv) Back of headstock, including rim pulley and taking-in scrolls.

(v) The whole of the front of the headstock.

42 The above recommendation is in addition to, and shall not prejudice the application of, section 20 of the Factories Act 1961 relating to the cleaning of machinery by women and young persons.

Joint Standing Committee

43 A Joint Standing Committee shall be appointed composed of representatives of:

(a) The British Spinners' and Doublers' Association
(b) The United Kingdom Textile Manufacturers' Association
(c) The National Association of Card, Blowing and Ring Room Operatives
(d) The Amalgamated Association of Operative Cotton Spinners and Twiners
(e) The Condenser and Allied Spinners' and Manufacturers' Association Ltd.
(f) HM Factory Inspectorate, Department of Employment and Productivity

44 The Committee shall consist of five representatives of the British Spinners' and Doublers' Association, three representatives of the United Kingdom Textile Manufacturers' Association, one representative of the Condenser and Allied Spinners' and Manufacturers' Association Ltd. and four representatives of each of the other parties referred to above.

45 The Superintending Inspector of Factories for the time being for the North Western (Manchester) Division shall be Chairman of the Committee.

46 The Committee will meet in April and October in each year to consider what, if any, amendments of, or additions to, these recommendations are desirable. Proposed amendments or additions should be submitted to the parties named in paragraph 43 above. Such proposals shall be considered forthwith by the respective parties, who will communicate their decision to the Chairman of the Committee as soon as possible. If the proposal is adopted by all the parties concerned, these recommendations shall be modified accordingly.

47 Should the proposals or any of them not be adopted by any of the parties, the matter in dispute shall be referred back to the parties with a view to reconsideration by a larger Committee.

SIGNED ON BEHALF OF:

The British Spinners' and Doublers' Association

H. CARY OWTRAM
T. B. BOOTHMAN
J. JOY
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The United Kingdom Textile Manufacturers' Association

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J. BROWNING
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Amalgamated Association of Operative Cotton Spinners and Twiners

FRED MAYALL
JOSEPH RICHARDSON
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Condenser and Allied Spinners' and Manufacturers' Association Limited

GEORGE RADCLIFFE

HM Factory Inspectorate, Department of Employment and Productivity

J. LESLIE HOBSON (*Chairman*)
S. H. CARTER
L. LIVESEY
JOHN W. HOBSON (*Secretary*)

22nd April 1968

Appendix A

Specification of Guards for Scrolls etc. of Self-Acting Mules

An efficient guard must comply with the following conditions:

1 *General*

(a) Any movable parts of the guards must be provided with fastenings to prevent accidental removal or displacement through vibrations.

(b) The edges of guards made of sheet metal must be wired or beaded (to prevent cuts or scratches).

(c) The guards must be securely fixed to the floor or to the machinery.

(d) The guards must be so constructed as to be readily opened out or removed to allow the bands to be easily passed round the carrier pulleys and fitted to the scrolls.

(e) If the guards are made of sheet metal, the metal should be not less than 24 gauge steel or 20 gauge black iron.

2 *Middle or Intermediate Backshaft Scrolls, Carrier Pulleys and Draw Bands*

(a) The scroll-guard must cover the top and front (wheel-gate side) of the scroll over its entire length; and

(b) be provided with flanges at each side to cover completely the sides of the scroll and any key or other projection on it; and

(c) the space between the backshaft and the holes in the flanges, through which the shaft passes, must be small enough to prevent fingers being inserted.

(d) The guard for the draw bands and carrier pulleys must be continued from the scroll-guard to the floor at the front, back and sides, to enclose completely the draw bands and carrier pulleys. The openings in front (near the floor level) for the passage of the bands, and those at the sides for the purpose of lubrication must not permit access to the nip between the carrier pulleys and the bands.

3 *End Scrolls and Draw Bands*

(a) The guard must cover the top, front and bottom of the scroll over its entire length. The openings in front for the passage of the bands must not permit access to the nip between the scroll and the bands.

(b) The guard must be provided with flanges at each side to cover completely any key or other projection on the scroll. The flange on the inner side to extend from the top to the bottom of the guard, and that on the outer side to extend from the top and bottom of the guard to the frame end.

(c) The space between the backshaft and the hole in the inner flange, through which the shaft passes, must be small enough to prevent the finger being inserted.

4 *Faller Stops*

The guards for fall stops should consist of a cover over the stop. The combined guard and faller stop is not deemed to satisfy the requirements of the Regulations.

5 *Draw Band Pulleys*

The guards for end draw band pulleys shall extend at least ½ inch beyond the rim of the pulley on the open end.

Appendix B

Guards for Mule Driving Straps

Specification and List of Makers

1 This specification has been devised to secure, as far as practicable, a uniform standard of effective guarding.

2 To further this end, the Joint Standing Committee has drawn up a list of guard makers who have given an undertaking to supply and erect only installations conforming strictly to this standard specification. Thus by placing of orders with one or other of these makers, firms ensure that the installation provides the requisite standard of safety.

3 Several methods of guarding are provided for. Where metal fasteners are used, guards of the fully continuous type must be installed. Bar type guards may only be used where the fasteners are of the laced or wire stitching type, with non-metal pegs. For this type of fastener also, a simplified form of continuous guard may be used.

4 *Minimum specification for fully continuous type guard, where metal fasteners are used*

(a) The guard shall extend the full length of the belt and shall continue upwards at each end at a suitable distance from each pulley, to a height level with the top of the pulley, in accordance with the Diagram, Figure 1.

(b) It shall have a minimum width of 18 inches throughout its length and shall be constructed of wood, sheet metal, expanded metal or other material, and be of a design of adequate strength and security.

(c) The Joint Standing Committee advise that no guard be installed except by a firm whose name appears on the list given in paragraph 11.

5 *Minimum specification for simplified continuous type guard where laced and wire stitching fasteners, with non-metal pegs, are used*

(a) For belts the UPPER sides of which are the tight or driving sides ("down drives"):

The guard shall extend at least one foot beyond the outer face of the lineshaft driving pulley and to within not more than 5 feet from the centre line of the driven pulley, in accordance with the Diagram, Figure 2.

(b) For belts the LOWER sides of which are the tight or driving sides ("up drives"):

The guard shall extend between the pulleys to within not more than two feet from the centre line of the driving pulley and to within not more than 5 feet from the centre line of the driven pulley, in accordance with the Diagram, Figure 3.

(c) Each guard shall have a minimum width of 15 inches throughout its length and shall be constructed of wood, sheet metal, expanded metal or other material and be of a design of adequate strength and security.

(d) The Joint Standing Committee advise that no guard be installed except by a firm whose name appears on the list given in paragraph 11.

6 *Minimum specification for bar type guards where laced and wire stitching fasteners, with non-metal pegs, are used*

(a) For belts the LOWER sides of which are the tight or driving sides ("up drives"):

(i) One bar "A" 18 inches measured horizontally from the inner face of the driving pulley towards the driven pulley and 12 inches below the level of the bottom face of the driving pulley, in accordance with the Diagram, Figure 5.

(ii) A second bar "B" not less than 5 feet nor more than 7 feet measured horizontally from the face of the driven pulley towards the driving pulley and not more than 15 inches below the level of the bottom face of the driven pulley, Figure 5.

(iii) If the distance between the two bars "A" and "B" exceeds 10 feet, an additional intermediate bar or bars shall be provided and so placed that the distance between any two bars does not exceed 10 feet. Such intermediate bar(s) shall lie in the line drawn between the bars "A" and "B".

(b) For belts the UPPER sides of which are the tight or driving sides ("down drives"):

(i) One bar "A" not more than 12 inches* beyond the outer face of the driving pulley, not more than 12 inches below the bottom face of this pulley and not higher than the centre of the pulley, in accordance with the Diagram, Figure 4.

*This distance is a maximum. It is intended that the bar shall be placed as close as is reasonably practicable to the belt consistent with allowance for any sagging of the belt and any difficulty in fixing, entailed by existing structures.

(ii) A second bar "B" 5 feet measured horizontally from the first bar "A" towards the driven pulley and not more than 12 inches below the level of the bottom face of the driving pulley, Figure 4.

(iii) A third bar "C" not less than 5 feet nor more than 7 feet measured horizontally from the inner face of the driven pulley towards the driving pulley, and not more than 15 inches below the level of the bottom face of the driven pulley, Figure 4.

7 The above specification shall not apply to double drives in which adjacent counter (driven) pulleys are situated on opposite sides of the driving line shaft. These are dealt with in paragraph 10.

8 *Structural Specification for Bar Type Guards*

(a) All bars shall be of adequate strength and securely fixed and supported, it being preferable that the method of support or suspension should allow of movement in the line of the drive.

(b) All piping shall be of iron or steel, free from corrosion or damage, and in good condition. No piping having a bore of less than 1½ inches or a thickness of metal of less than 0·14 inches shall be used.

(c) Hanger or suspension rods shall be of mild steel, free from rust or corrosion and not less than one-half inch diameter or the equivalent cross sectional area. The maximum distance between any two consecutive hangers shall not exceed 15 feet.

(d) Any clamp, fastener, plug or other method of securing the hanger rod shall have an effective strength at least equal to that of the hanger.

(e) Where the underside of a bar is GREATER than 6 feet 6 inches from the floor, it shall be continuous throughout the length of the room.

(f) Where the underside of a bar is LESS than 6 feet 6 inches from the floor, it shall not extent across the mulegate, but shall take the form of a trapeze.

9 *Ladder Type Guards*

Ladder type guards may be accepted as the equivalent of bar guards if of equivalent strength and security and the rungs occupy positions specified for bar guards.

10 *DOUBLE DRIVES – that is drives where the mule headstocks and counter pulleys are on the opposite sides of the line shaft*

The guarding of the above-named belt drives, which exist in a comparatively few mills, has been found difficult to bring within the standard specification which has been drawn up to meet the ordinary cases generally of long drives where both headstocks are on the same side of the line shaft. The term "double" drive is really a misnomer but has been used as a convenient short method of describing what are in reality two single drives. The standard specification has been found unsuitable in application to such drives because:

(a) The bar fixed for the down drive of one mule will be almost coincident for the up drive of the other mule.

(b) The drives being usually short, the positioning of the bars near the counter pulleys gives rise to some difficulty owing to the position of the counter belts especially where there is a second counter shaft.

(c) Further, the fact that the headstock ocupies some 4 feet 6 inches of space underneath these counter drives gives a certain measure of safety, not by way of guarding but by way of considerably diminishing the space under the belt in which a person may be standing.

As it has been found impossible to adopt a suitable standard specification to suit all cases, it has been agreed that as there are not many such cases, each should be considered on its merits.

11 *List of Makers of Suitable Mule Driving Strap Guards*

Each of these makers has given an undertaking to supply and erect only guards conforming strictly to the above specifications.

James Baxendale & Son Ltd.
Pilkington Street
Bolton

R. Whittaker & Company
Heaton Street, off Dawes Street
Bolton

J. Smethurst & Company
Peel Works
Higher Bridge Street
Bolton

A. Greaves (Lees) Limited
High Street
Lees
Oldham

Whitworth, Mallinson & Co. Ltd.
Park Street
Royton
Oldham

H. Cheetham & Co. (Machines) Limited
Vale Works
Stockfield Road
Oldham

E. Howarth & Son Ltd.
Linney Lane
Shaw
Oldham

Hayworth & Simpson Ltd.
Hafley Mill
Buckley Road
Rochdale

The following makers, formerly on the list, no longer wish to undertake this work or else are no longer in business:

H. E. Priestly, Railway Street, Dukinfield, Lancs.
Manwood Miller & Co., Tame Valley, Dukinfield, Lancs.
Crolt Engineering Ltd., Bentinck Street, Bolton.
R. Whitworth & Sons, Royton, Oldham.
John Kitchinman, Hafley Mill, Buckley Road, Rochdale.

FIG. 1.

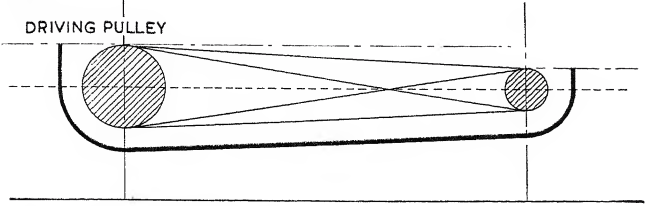

Fig. 1. DOWN OR UP DRIVE. Minimum specification for continuous type of guard (where metal fasteners are used).

FIG. 2.

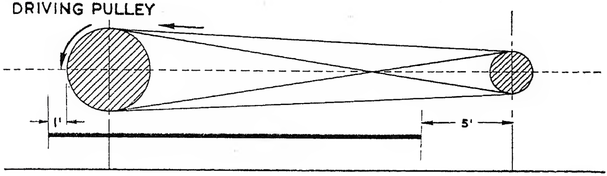

Fig. 2. DOWN DRIVE. Minimum specification for board or trough type guards (where laced or wire stitching fasteners, with non-metal pegs, are used).

FIG. 3.

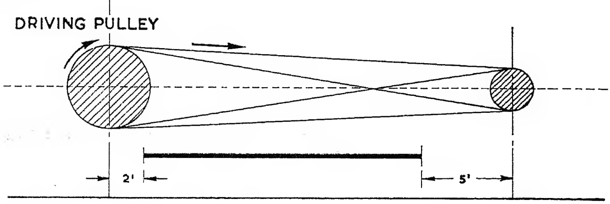

Fig. 3. UP DRIVE. Minimum specification for board or trough type guards (where laced or wire stitching fasteners, with non-metal pegs, are used).

FIG.4.

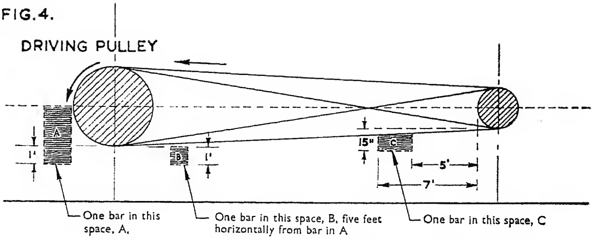
DRIVING PULLEY
A
1'
B
1'
15"
C
5'
7'
One bar in this space, A.
One bar in this space, B, five feet horizontally from bar in A
One bar in this space, C

Fig. 4. DOWN DRIVE. Minimum specification for bar type guards (where laced or wire stitching fasteners, with non-metal pegs, are used).

FIG.5.

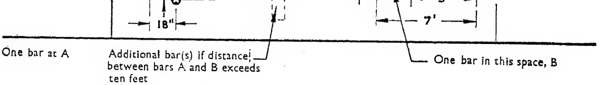
DRIVING PULLEY
1'
A
18"
15"
B
5'
7'
One bar at A
Additional bar(s) if distance between bars A and B exceeds ten feet
One bar in this space, B

Fig. 5. UP DRIVE. Minimum specification for bar type guards (where laced or wire stitching fasteners, with non-metal pegs, are used).

Appendix C

Stang Locks

1 The Joint Standing Committee have, in the past, considered the following locks suitable for the setting on rods of mules:

"Premier" – Mr. J. Lees, 138 Gainsborough Avenue, Oldham

"Mellor & Cooper" patent (fitted at Star Mill, Royton)
(J. J. Smithies & Co., Livesey Street, Rochdale – Sole Agent)

"Dransfield's" patent, made by J. Dransfield, Melrose Ironworks, Oldham

Platt Bros. Ltd., Oldham – side bolt type

Platt Bros. Ltd., Oldham – drop catch type

Platt Bros. Ltd., Oldham – new safety catch type

Lock fitted at Duke Mill Ltd., Shaw, Oldham – side bolt type

Lock fitted at Musgrave Spinning Co. Ltd., Bolton

Taylor Lang & Co. Ltd., Stalybridge – 4 types

"Split Stang" made by Kershaw & Sugden, Greenhill Iron Works, Oldham

Kershaw & Sugden, Bolton Street, Greengate, Oldham – drop catch type

Mark Dunkerley, 89 Stamford Road, Waterhead (now taken over by J. & A. Horrocks, 58 Dunkerley Street, Oldham)

Thomas Oliver & Sons (Bollington) Ltd., Waterhouse Mills, Bollington, Cheshire

"Watsons Patent" made by Messrs. Clegg & Coupe, Molesworth Street, Rochdale

Mill Hill Spinning Co., Bolton

Dart Mill Ltd., Union Road, Bolton   For own use only

Grape Mill Co. Ltd., Royton, Oldham   For own use only

The Warwick Mill Co. Ltd., Middleton   For own use only
(now Combined English Mills (Spinners) Ltd.)

Sir John Holden & Sons, Astley Bridge, Bolton   For own use only

Fir Spinning Co. Ltd., Royton, Oldham

Park & Sandy Lane Mills Ltd., Schofield Street, Royton
(Henly Automatic Locking Motion)

Vine Mill (Royton) Ltd., Royton
(name changed to Royton Textile Corporation Limited)

2 Several of these firms are no longer in existence but, where guards manufactured by these firms are now in use, they will be acceptable.

Appendix D

System of Stopping and Starting Mules and Signalling when "Wiping Down"

1 The piecer, before going under to clean, must go into the first slip and wait there until he receives the recognised signal from the minder. After cleaning the first mule, he must again go into the first slip and await the signal before going under the second mule; he must again go into the first slip after cleaning the second mule.

2 The minder must STOP the mule on the outward run, *and apply either the hand or foot brake* before he signals to the piecer to go under – the signal must be given by both hands held above the head. He must see that the piecer is in the first slip before re-starting the first mule, the same procedure to be followed with the second mule.

3 If two piecers are engaged simultaneously in "Drying Down" the same practice to be followed, separate signals being given to each piecer.

4 *When for any reason it is necessary for any person to go between the carriage and the roller beam the carriage must be stopped on the outward run and the hand or foot brake applied.*

Note.—The application of the hand or foot brake is to provide an additional safeguard against any possible unforeseen accident.

Appendix E

1 A strap fork and nip guard required by paragraph 24 will be acceptable to the Joint Standing Committee only if it is of sound, rigid construction and prevents access to the intake between the belt and pulleys. The Joint Standing Committee have, in the past, considered guards made by the following firms and have found them to be suitable:

Tweedales & Smalley (1920) Ltd., Castleton, Rochdale
Howard & Bullough Ltd., Accrington, Lancs.
Platt Bros. & Co. Ltd., Hartford Works, Oldham
Dobson & Barlow Ltd., (two models), Bradley Fold, Bolton
Wm. Tatham Ltd., Belfield Works, Rochdale
E. & D. Sharp Ltd., Incorporating E. Morris & Co. (Padiham) Ltd., 8 Higham Road, Padiham
Thos. Breaks, Crawford Street, Rochdale
Yates & Co. Ltd., Richmond Street, Preston
Cook & Co. (M/cr) Ltd., 18 Exchange Street, Manchester 2.
Bury Ring Mill Ltd., York Street, Bury
Asa Lees & Co. Ltd., Soho Ironworks, Oldham
J. & P. Coats Ltd., Paisley (four models for own cards)
H. Bolton & Sons, Ruskin Street, Oldham
Lancashire Cotton Corporation Ltd., Brunswick Mill, Ancoats, Manchester
John Bishop & Co. Ltd., Brook House Farm Factory, Peel Green, Salford
Brooks & Doxey Ltd., Thomas Street, West Gorton, Manchester (Musgrave Mill Pattern)

2 Several of these firms are no longer in existence but, where guards manufactured by these firms are now in use, they will be acceptable.

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